TRANSACTIONS

OF THE

American Society of Civil Engineers.

INDEX.

VOLUME LV.

DECEMBER, 1905.

SUBJECT INDEX, PAGE 460.
AUTHOR INDEX, PAGE 464.

Titles of papers are in quotation marks when given with the author's name.

VOLUME LV.

SUBJECT INDEX.

ARCHES.

"A Few Points in the Design of Reinforced Concrete — ." B. R. Leffler. 183. Discussion: William Cain, Wilbur J. Watson and Almon H. Fuller, 189.

BRIDGES.

"A Few Points in the Design of Reinforced Concrete Arches." B. R. Leffler. (With Discussion.) 183.

"A New Swing Bridge at Copenhagen, Denmark." H. C. V. Moeller. 129. Discussion: John C. Moses, L. J. Le Conte and H. T. Forchhammer, 139.

"A Rational Form of Stiffened Suspension Bridge." Gustav Lindenthal. 1. Discussion: W. Hildenbrand, Joseph Mayer, R. S. Buck, W. W. Crehore, Theodore Cooper, C. C. Schneider, Oswald Erlinghagen, Henry W. Hodge, F. Schüle, J. Melan, Leon S. Moisseiff and A. Rieppel, 16.

"The Ferry Bridge Across the Ship Canal at Duluth, Minnesota." C. A. P. Turner. 322.

"The Reconstruction of the Baltimore and Ohio Railroad Bridge over the Ohio River, at Benwood, West Virginia." J. E. Greiner. 146. Discussion: O. E. Hovey, 156.

"Theory and Formulas for the Analytical Computation of a Three-Span Suspension Bridge with Braced Cable." Leon S. Moisseiff. 94. Discussion: I. P. Church and George F. Swain, 114.

BUILDINGS.

"The Theory of Frameworks with Rectangular Panels, and Its Application to — which have to Resist Wind." Ernst F. Jonson. (With Discussion.) 413.

CABLES.

Eye-bar cable suspension bridges. 1 and 94.

DOMES.

"Theory of the Spherical or Conical Dome of Reinforced Concrete or Metal." William Cain. 201.

DRAINAGE.

"Some Specialties of the System for Flushing the New Sewers of the City of Mexico." Roberto Gayol. (With Discussion.) 262.

DRAW-BRIDGES.

"A New Swing Bridge at Copenhagen, Denmark." H. C. V. Moeller. (With Discussion.) 129.

ELECTRIC LIGHTING.

— at Ontario, California. 173.

ELECTRIC POWER.

"The Hydraulic Plant of the Puget Sound Power Company." Edwin H. Warner. (With Discussion.) 228.

FERRIES.

"The Ferry Bridge Across the Ship Canal at Duluth, Minnesota." C. A. P. Turner. 322.

FOUNDATIONS.

"A Few Remarks on —." L. L. Buck. 169.

FRAMEWORKS.

"The Theory of — with Rectangular Panels, and Its Application to Buildings which have to Resist Wind." Ernst F. Jonson. 413. Discussion: H. T. Forchhammer, 424.

HARBORS.

"Notes on the Improvement of River and Harbor Outlets in the United States." D. A. Watt. (With Discussion.) 288.

IRRIGATION.

"The — System of Ontario, California: Its Development and Cost." F. E. Trask. 173. Discussion: Arthur S. Hobby, 180.

MEMOIRS OF DECEASED MEMBERS.

Burton, Standish Barry. 444.
Greene, Joseph Norton. 446.
Hayes, Richard Somers. 448.
Knowlton, Charles Andrews. 451.
McCalla, Richard Calvin. 453.
Marr, George Anson. 455.
Woollard, George Clifton. 456.

POWER PLANTS.

—at Ontario, California. 173.

"The Hydraulic Plant of the Puget Sound Power Company." Edwin H. Warner. (With Discussion.) 228.

REINFORCED CONCRETE.

"A Few Points in the Design of — Arches." B. R. Leffler. (With Discussion.) 183.

"Theory of the Spherical or Conical Dome of — or Metal." William Cain. 201.

RIVERS.

"Notes on the Improvement of River and Harbor Outlets in the United States." D. A. Watt. 288. Discussion: L. J. LeConte and William W. Harts, 306.

ROUND-HOUSES.

"Round-House Framing." R. D. Coombs. 157.

RUN-OFF.

Calculation of — for Sewers. 401.

SEWERAGE.

"Some Specialties of the System for Flushing the New Sewers of the City of Mexico." Roberto Gayol. 262. Discussion: Alexander Potter, 283.

"The Walworth Sewer, Cleveland, Ohio." Walter Camp Parmley. 341. Discussion: C. G. Force, C. E. Gregory and L. J. Le Conte, 401.

SUSPENSION BRIDGES.

"A Rational Form of Stiffened Suspension Bridge." Gustav Lindenthal. (With Discussion.) 1.

"Theory and Formulas for the Analytical Computation of a Three-Span Suspension Bridge with Braced Cable." Leon S. Moisseiff. (With Discussion.) 94.

TRUSSES.

Stiffening — for suspension bridges. 1.

"The Reconstruction of the Baltimore and Ohio Railroad Bridge over the Ohio River, at Benwood, West Virginia." J. E. Greiner. (With Discussion.) 146.

WATER POWER.

"The Hydraulic Plant of the Puget Sound Power Company." Edwin H. Warner. 228. Discussion: William S. Post, Joseph H. Cunningham, Arthur L. Adams and Verne L. Havens, 250.

WATER, WASTE OF.

"An Example of the Legitimate Use of Water for Domestic Purposes." K. F. Cooper. 430. Discussion: F. W. Dalrymple, Alexander Potter, V. H. Hewes, M. R. Sherrerd, G. L. Christian, Edwin Duryea, Jr., Theodore Belzner and James Owen, 434.

WATER-WORKS.

"An Example of the Legitimate Use of Water for Domestic Purposes." K. F. Cooper. (With Discussion.) 430.

WEIRS.

Measuring —. 180.

AUTHOR INDEX.

ADAMS, ARTHUR L.

Hydraulic power plants. 254.

BELZNER, T.

Legitimate use of water. 442.

BUCK, L. L.

"A Few Remarks on Foundations." 169.

BUCK, R. S.

Stiffened suspension bridges. 24.

BURTON, STANDISH BARRY.

Memoir of. 444.

CAIN, WILLIAM.

Reinforced concrete arches. 189.

"Theory of the Spherical or Conical Dome of Reinforced Concrete or Metal." 201.

CHRISTIAN, G. L.

Legitimate use of water. 437.

CHURCH, IRVING P.

Three-Span Suspension Bridges. 114.

COOMBS, R. D.

"Round-House Framing." 157.

COOPER, K. F.

"An Example of the Legitimate Use of Water for Domestic Purposes." 430.

COOPER, THEODORE.

Stiffened suspension bridges. 35.

CREHORE, W. W.

Stiffened suspension bridges. 33.

CUNNINGHAM, JOSEPH H.

Hydraulic power plants. 250.

DALRYMPLE, F. W.

Legitimate use of water. 434.

DURYEA, EDWIN, Jr.
Legitimate use of water. 441.

ERLINGHAGEN, OSWALD.
Stiffened suspension bridges. 40.

FORCE, C. G.
The Walworth Sewer, Cleveland, Ohio. 401.

FORCHHAMMER, H. T.
Swing bridges. 141.
Theory of rectangular frameworks. 424.

FULLER, ALMON H.
Reinforced concrete arches. 195.

GAYOL, ROBERTO.
"Some Specialties of the System for Flushing the New Sewers of the City of Mexico." 262.

GREENE, JOSEPH NORTON.
Memoir of. 446.

GREGORY, C. E.
The Walworth Sewer, Cleveland, Ohio. 401.

GREINER, J. E.
"The Reconstruction of the Baltimore and Ohio Railroad Bridge over the Ohio River, at Benwood, West Virginia." 146.

HARTS, WILLIAM W.
River and harbor outlets. 308.

HAVENS, VERNE L.
Hydraulic power plants. 256.

HAYES, RICHARD SOMERS.
Memoir of. 448.

HEWES, V. H.
Legitimate use of water. 435.

HILDENBRAND, W.
Stiffened suspension bridges. 16.

HOBBY, ARTHUR S.
A California irrigation system. 180.

HODGE, HENRY W.
Stiffened suspension bridges. 46.

HOVEY, O. E.

Reconstruction of Benwood Bridge. 156.

JONSON, ERNST F.

"The Theory of Frameworks with Rectangular Panels, and Its Application to Buildings which have to Resist Wind." 413.

KNOWLTON, CHARLES ANDREWS.

Memoir of. 451.

Le CONTE, L. J.

River and harbor outlets. 306.
Swing bridges. 140.
The Walworth Sewer, Cleveland, Ohio. 407.

LEFFLER, B. R.

"A Few Points in the Design of Reinforced Concrete Arches." 183.

LINDENTHAL, GUSTAV.

"A Rational Form of Stiffened Suspension Bridge." 1.

McCALLA, RICHARD CALVIN.

Memoir of. 453.

MARR, GEORGE ANSON.

Memoir of. 455.

MAYER, JOSEPH.

Stiffened suspension bridges. 21.

MELAN, J.

Stiffened suspension bridges. 50.

MOELLER, H. C. V.

"A New Swing Bridge at Copenhagen, Denmark." 129.

MOISSEIFF, LEON S.

Stiffened suspension bridges. 56.
"Theory and Formulas for the Analytical Computation of a Three-Span Suspension Bridge with Braced Cable." 94.

MOSES, JOHN C.

Swing bridges. 139.

OWEN, JAMES.

Legitimate use of water. 443.

PARMLEY, WALTER CAMP.

"The Walworth Sewer, Cleveland, Ohio." 341.

POST, WILLIAM S.
Hydraulic power plants. 250.

POTTER, ALEXANDER.
Legitimate use of water. 434.
Sewer flushing system in the City of Mexico. 283.

RIEPPEL, A.
Stiffened suspension bridges. 56.

SCHNEIDER, C. C.
Stiffened suspension bridges. 37.

SCHÜLE, F.
Stiffened suspension bridges. 48.

SHERRERD, M. R.
Legitimate use of water. 435.

SWAIN, GEORGE F.
Three-Span Suspension Bridges. 118.

TRASK, F. E.
"The Irrigation System of Ontario, California: Its Development and Cost." 173.

TURNER, C. A. P.
"The Ferry Bridge Across the Ship Canal at Duluth, Minnesota." 322.

WARNER, EDWIN H.
"The Hydraulic Plant of the Puget Sound Power Company." 228.

WATSON, WILBUR J.
Reinforced concrete arches. 194.

WATT, D. A.
"Notes on the Improvement of River and Harbor Outlets in the United States." 288.

WOOLLARD, GEORGE CLIFTON.
Memoir of. 456.